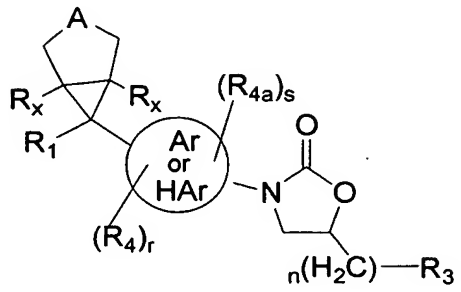
WHAT IS CLAIMED IS:

1. The present invention relates to compounds of formula I:



I

its enantiomer, diastereomer, or pharmaceutically acceptable salt, hydrate or prodrug thereof wherein:

R_1 represents

vi) hydrogen,

vii) NR_5R_6,

viii) $CR_7R_8R_9$, $C(R)_2OR_{14}$, CH_2NHR_{14},

ix) $C(=O)R_{13}$, $C(=NOH)H$, $C(=NOR_{13})H$, $C(=NOR_{13})R_{13}$, $C(=NOH)R_{13}$, $C(=O)N(R_{13})_2$, $C(=NOH)N(R_{13})_2$, $NHC(=X_1)N(R_{13})_2$, $(C=NH)R_7$, $N(R_{13})C(=X_1)N(R_{13})_2$, $COOR_{13}$, SO_2R_{14}, $N(R_{13})SO_2R_{14}$, $N(R_{13})COR_{14}$,

x) $(C_{1-6}alkyl)CN$, CN, $CH=C(R)_2$, $(CH_2)_pOH$, $C(=O)CHR_{13}$, $C(=NR_{13})R_{13}$, $NR_{10}C(=X_1)R_{13}$; or

vi) C_{5-10} heterocycle optionally substituted with 1-3 groups of R_7, which may be attached through either a carbon or a heteroatom;

A represents NR, O, or S(O)p;

represents aryl or heteroaryl, heterocycle, heterocyclyl or heterocyclic, provided that in the case of a heteroaryl, heterocycle, heterocyclyl or heterocyclic, the cyclopropyl is not attached to a nitrogen atom on the ring;

R_x represents hydrogen or C_{1-6} alkyl;

R3 represent

i) $NR_{13}(C=X_2)R_{12}$,

ii) $NR_{13}(C=X_1)R_{12}$,

iii) $NR_{13}SO_2R_{14}$,

iv) $N(R_{13})$heteroaryl,

v) $NR_{13}(CHR_{13})_{0-4}$aryl,

vi) $NR_{13}(CHR_{13})_{0-4}$heteroaryl,

vii) $S(CHR_{13})_{0-4}$aryl,

viii) $S(CHR_{13})_{0-4}$heteroaryl,

ix) $O(CHR_{13})_{0-4}$aryl,

x) $O(CHR_{13})_{0-4}$heteroaryl,

xi) $NOH(C=X_1)R_{12}$,

xii) -OC=N(OCOaryl) C_{1-6} alkyl

xiii) -OC=N(OH) C_{1-6} alkyl

xiv)C_{5-10} heteroaryl which may be attached through either a carbon or a heteroatom; said aryl and heteroaryl optionally substituted with 1-3 groups of R7,

R4, and R4a, independently represent

v) hydrogen,

vi) halogen,

vii) C_{1-6} alkoxy, or

viii) C_{1-6} alkyl

r and s independently are 1-3, with the provision that when $(R_{4a})_s$ and $(R_4)_r$ are attached to an Ar or HAr ring the sum of r and s is less than or equal to 4;

R_5 and R_6 independently represent

xiii) hydrogen,

xiv) C_{1-6} alkyl optionally substituted with 1-3 groups of halogen, CN, OH, C_{1-6} alkoxy, amino, imino, hydroxyamino, alkoxyamino, C_{1-6} acyloxy, C_{1-6} alkylsulfenyl, C_{1-6} alkylsulfinyl, C_{1-6} alkylsulfonyl, aminosulfonyl, C_{1-6} alkylaminosulfonyl, C_{1-6} dialkylaminosulfonyl, 4-morpholinylsulfonyl, phenyl, pyridine, 5-isoxazolyl, ethylenyloxy, or ethynyl, said phenyl and pyridine optionally substituted with 1-3 halogen, CN, OH, CF_3, C_{1-6} alkyl or C_{1-6} alkoxy;

xv) C_{1-6} acyl optionally substituted with 1-3 groups of halogen, OH, SH, C_{1-6} alkoxy, naphthalenoxy, phenoxy, amino, C_{1-6} acylamino, hydroxylamino, alkoxylamino, C_{1-6} acyloxy, aralkyloxy, phenyl, pyridine, C_{1-6} alkylcarbonyl, C_{1-6} alkylamino, C_{1-6} dialkylamino, C_{1-6} hydroxyacyloxy, C_{1-6} alkylsulfenyl, phthalimido, maleimido, succinimido, said phenoxy, phenyl and pyridine optionally substituted with 1-3 groups of halo, OH, CN, C_{1-6} alkoxy, amino, C_{1-6} acylamino, CF_3 or C_{1-6} alkyl;

xvi) C_{1-6} alkylsulfonyl optionally substituted with 1-3 groups of halogen, OH, C_{1-6} alkoxy, amino, hydroxylamino, alkoxylamino, C_{1-6} acyloxy, or phenyl; said phenyl optionally substituted with 1-3 groups of halo, OH, C_{1-6} alkoxy, amino, C_{1-6} acylamino, CF_3 or C_{1-6} alkyl;

xvii) arylsulfonyl optionally substituted with 1-3 of halogen, C_{1-6} alkoxy, OH or C_{1-6} alkyl;

xviii) C_{1-6} alkoxycarbonyl optionally substituted with 1-3 of halogen, OH, C_{1-6} alkoxy, C_{1-6} acyloxy, or phenyl, said phenyl optionally substituted with 1-3 groups of halo, OH, C_{1-6} alkoxy, amino, C_{1-6} acylamino, CF_3 or C_{1-6} alkyl;

xix) aminocarbonyl, C_{1-6} alkylaminocarbonyl or C_{1-6} dialkylaminocarbonyl, said alkyl groups optionally substituted with 1-3 groups of halogen, OH, C_{1-6} alkoxy or phenyl

xx) five to six membered heterocycles optionally substituted with 1-3 groups of halogen, OH, CN, amino, C_{1-6} acylamino, C_{1-6} alkylsulfonylamino, C_{1-6} alkoxycarbonylamino, C_{1-6} alkoxy, C_{1-6} acyloxy or C_{1-6} alkyl, said alkyl optionally substituted with 1-3 groups of halogen, or C_{1-6} alkoxy;

xxi) C_{3-6} cycloalkylcarbonyl optionally substituted with 1-3 groups of halogen, OH, C_{1-6} alkoxy or CN;

xxii) benzoyl optionally substituted with 1-3 groups of halogen, OH, C_{1-6} alkoxy, C_{1-6} alkyl, CF_3, C_{1-6} alkanoyl, amino or C_{1-6} acylamino;

xxiii) pyrrolylcarbonyl optionally substituted with 1-3 of C_{1-6} alkyl;

xxiv) C_{1-2} acyloxyacetyl where the acyl is optionally substituted with amino, C_{1-6} alkylamino, C_{1-6} dialkylamino, 4-morpholino, 4-aminophenyl, 4-(dialkylamino)phenyl, 4-(glycylamino)phenyl; or

R_5 and R_6 taken together with any intervening atoms can form a 3 to 7 membered heterocyclic ring containing carbon atoms and 1-2 heteroatoms independently chosen from O, S, SO, SO_2, N, or NR_8;

R_7 represent

iii) hydrogen, halogen, CN, CO_2R, $CON(R)_2$, CHO, CH_2NHAc, C(=NOR), OH, C_{1-6} alkoxy, C_{1-6} alkyl, alkenyl, hydroxy C_{1-6} alkyl, $(CH_2)_{1-3}NHC(O)C_{1-6}$ alkyl, $(CH_2)_{1-3}N(C_{1-6}$ alkyl$)_2$

iv) $(CH_2)_n$amino, $(CH_2)_nC1$-6 alkylamino, C_{1-6} dialkylamino, hydroxylamino or C_{1-2} alkoxyamino all of which can be optionally substituted on the nitrogen with C_{1-6} acyl, C_{1-6} alkylsulfonyl or C_{1-6} alkoxycarbonyl, said acyl and alkylsulfonyl optionally substituted with 1-2 of halogen or OH;

R_8 and R_9 independently represents

iv) H, CN,

v) C_{1-6} alkyl optionally substituted with 1-3 halogen, CN, OH, C_{1-6} alkoxy, C_{1-6} acyloxy, or amino,

vi) phenyl optionally substituted with 1-3 groups of halogen, OH, C_{1-6} alkoxy; or

R_7 and R_8 taken together can form a 3-7 membered carbon ring optionally interrupted with 1-2 heteroatoms chosen from O, S, SO, SO_2, NH, and NR_8;

X_1 represents O, S or NR_{13}, NCN, NCO_2R_{16}, or NSO_2R_{14}

X_2 represents O, S, NH or NSO_2R_{14};

R_{10} represents hydrogen, C_{1-6} alkyl or CO_2R_{15};

R_{12} represents hydrogen, C_{1-6} alkyl, NH_2, OR, CHF_2, $CHCl_2$, CR_2Cl, $(CH_2)_nSR$, $(CH_2)_nCN$, $(CH_2)_nSO_2R$, $(CH_2)_nS(O)R$, C_{1-6} alkylamino, C_{5-10} heteroaryl or C_{1-6} dialkylamino, where

said alkyl may be substituted with 1-3 groups of halo, CN, OH or C_{1-6} alkoxy, said heteroaryl optionally substituted with 1-3 groups of R_7;

Each R_{13} represents independently hydrogen, C_{1-6} alkyl, C_{6-10} aryl, NR_5R_6, SR_8, $S(O)R_8$, $S(O)_2R_8$, CN, OH, C_{1-6} alkyl$S(O)R$, C_{1-6} alkoxycarbonyl, hydroxycarbonyl, -OCOaryl, C_{1-6} acyl, C_{3-7} membered carbon ring optionally interrupted with 1-4 heteroatoms chosen from O, S, SO, SO_2, NH and NR_8 where said C_{1-6} alkyl, aryl or C_{1-6} acyl groups may be independently substituted with 0-3 halogens, hydroxy, $N(R)_2$, CO_2R, C_{6-10} aryl, C_{5-10} heteroaryl, or C_{1-6} alkoxy groups;

When two R_{13} groups are attached to the same atom or two adjacent atoms they may be taken together to form a 3-7 membered carbon ring optionally interrupted with 1-2 heteroatoms chosen from O, S, SO, SO_2, NH, and NR_8;

R represents hydrogen or C_{1-6} alkyl;

R_{14} represents amino, C_{1-6} alkyl, C_{1-6} haloalkyl, five to six membered heterocycles or phenyl, said phenyl and heterocycles optionally substituted with 1-3 group of halo, C_{1-6} alkoxy, C_{1-6} acylamino, or C_{1-6} alkyl, hydroxy and/or amino, said amino and hydroxy optionally protected with an amino or hydroxy protecting group;

R_{15} is C_{1-6} alkyl or benzyl said benzyl optionally substituted with 1-3 groups of halo, OH, C_{1-6} alkoxy, amino, C_{1-6} acylamino, or C_{1-6} alkyl;

R_{16} is hydrogen, C_{5-10}heteroaryl, C_{6-10}aryl, said heteroaryl and aryl optionally substituted with 1-3 groups of R7;

p represents 0-2 and

m, n, and q represents 0-1.

2. A compound according to claim 1 wherein R_1 represents H, NR_5R_6, CN, OH, $C(R)_2OR_{14}$, $NHC(=X1)N(R_{13})_2$, $C(=NOH)N(R_{13})_2$, $NR_{10}C(=X_1)R_{13}$ or $CR_7R_8R_9$.

3. A compound according to claim 1 wherein 

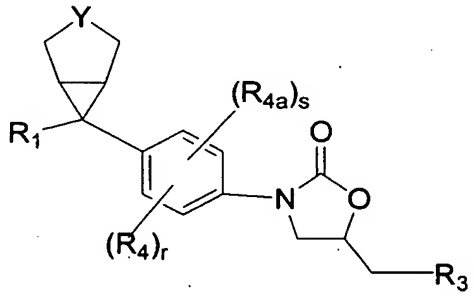
is phenyl, pyridine, pyrimidine, or piperidine.

4. A compound according to claim 3 wherein R_1 is NR_5R_6, or CN and R3 is $NR_{10}C(=X_1)R_{13}$, $NR(C=X_1)R_{12}$, C_{5-10} heteroaryl, $NH(CH_2)_{0-4}$aryl, $NH(CH_2)_{0-4}$heteroaryl, said aryl and heteroaryl optionally substituted with 1-3 groups of Ra .

5. A compound according to claim 3 wherein R_3 is a C_{5-10} heteroaryl represented by 

which represents an optionally substituted aromatic heterocyclic group containing 1to 4 nitrogen atoms and at least one double bond, and which is connected through a bond on any nitrogen.

6. A compound according to claim 1 wherein the structural formula is II:



Formula II

wherein R_1, R_4, R_{4a},Y and R_3 are as described above.

7. A compound which is:
N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyanobicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

1-[5(R)-3-[4-[(1α,5α,6β)-(6-cyanobicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole,

N-[5(S)-3-[4-[(1α,5α,6β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide ,

1-[5(R)-3-[4-[(1α,5α,6β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole,

1-[5(R)-3-[4-[(1α,5α,6β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]-1,2,3-triazole ,

N-[5(S)-3-[4-[(1α,5α,6β)-(3-acetoxyacetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyano-3-hydroxyacetyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyano-3-methanesulfonyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyano-3-methyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(3,6-dicyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-(6-cyano-3-cyanomethyl-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

5(R)-3-[4-[(1α,5α,6β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[(isoxazol-3-yl)oxy]methyloxazolidin-2-one,

5(R)-3-[4-[(1α,5α,6β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[(isoxazol-3-yl)oxy]methyloxazolidin-2-one ,

5(R)-3-[4-[(1α,5α,6β)-(3-t-butoxycarbonyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[N-(t-butoxycarbonyl)-N-(isoxazol-3-yl)]aminomethyloxazolidin-2-one,

5(R)-3-[4-[(1α,5α,6β)-(6-cyano-3-azabicyclo[3.1.0]hexan-6-yl)]phenyl]-5-[N-(isoxazol-3-yl)]aminomethyloxazolidin-2-one,

N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(5-cyanopyridin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(pyridin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

N-[5(S)-3-[4-[(1α,5α,6β)-[3-acetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(pyrimidin-2-yl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(4-pyridylmethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(N-cyano-1-iminoethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-methoxycarbonyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(N-cyano-S-methylthioiminomethyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(N-cyanocarboxamidyl)-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[3-(N,N'-t-butoxycarbonylcarboxamidyl)-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[3-carboxamidyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[3-(N-t-Butoxycarbonylamino)acetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[3-aminoacetyl-6-cyano-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-methanesulfonylacetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(dibenzylphosphoryloxy)acetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,
N-[5(S)-3-[4-[(1α,5α,6β)-[6-cyano-3-(phosphoryloxy)acetyl-3-azabicyclo[3.1.0]hexan-6-yl]]phenyl]-2-oxooxazolidin-5-ylmethyl]acetamide,

or their enantiomer, diastereomer, or pharmaceutically acceptable salt, hydrate or prodrug thereof wherein.

8. A pharmaceutical composition comprised of a compound in accordance with claim 1 in combination with a pharmaceutically acceptable carrier

and optionally a in combination with a vitamin selected from the group consisting vitamin B2, vitamin B6, vitamin B12 and folic acid.

9. A method of treating or preventing a bacterial infection in a mammalian patient in need thereof, comprising administering to said patient an effective amount of a compound of claim 1.

10. A method of treating or preventing bacterial infection or an oxazolidinone-associated side effect by administering an effective amount of a compound of formula I of claim 1 and an effective amount of one or more of a vitamin selected from the group consisting of vitamin B2, vitamin B6, vitamin B12 and folic acid to a patient in need thereof.

11. A method according to claim 16 for treating or preventing oxazolidinone-associated normocyctic anemia, peripheral sensory neuropathy, sideroblastic anemia, peripheral sensory neuropathy, optic neuropathy, seizures, thrombocytopenia, cheilosis, hypo-regenerative anemia, megaloblastic anemia and seborrheic dermatitis by administering an effective amount of vitamin B2 to a patient in need thereof.